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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Dietrich Mund

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EXAMINER

TUROC, DAVID P

ART UNIT

PAPER NUMBER

1762

MAIL DATE

DELIVERY MODE

06/08/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.		Applicant(s)	
	10/511,315		MUND ET AL.	
	Examiner		Art Unit	
	David Turocy		1762	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 March 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-6, 8-22 and 34-36 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2-6, 11-18, 21, 22 and 34-36 is/are rejected.
- 7) ☒ Claim(s) 8-10, 19 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 October 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. Applicant's amendments filed 3/23/2007, have been fully considered and reviewed by the examiner. The examiner notes that amendments to claims 2, 3 and 34 and the cancellation of claims 1, 7, 33, and 37. Currently claims 2-6, 8-22 and 34-36 are pending in this application.

Response to Arguments

2. The applicant has argued against the examiners position that the thickness of the layers is a result effective variable, stating the reference fails to appreciate such. However, the examiner maintains the position that the determination of the thickness of coating layers is a result effective variable that is well within the skill of one ordinary in the art. Wienand deposits a first layer and a BSG layer, each deposited for desired properties and therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the coating thickness used in the process, through routine experimentation, to substrate with the desired properties associated with both layers.

3. Other arguments with respect to claims are directed to newly added limitations not present at the time of final rejection and therefore have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 3-6, 11-16, 22, and 34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wienand et al. (US Patent Application Publication 2002/0084885) in view of US Patent 4492717 by Pliskin and US Patent 6100202 by Lin et al.

Claim 3, Wienand et al. discloses a process for producing a coated substrate having at least one metallic surface, comprising: depositing an evaporation-coating glass in structured form at least on the at least one metallic surface (paragraph 26, paragraphs 49-54). Wienand et al. discloses a process for producing a coated substrate having at least one metallic surface, comprising: producing at least one negatively structured first coating on the metallic surface (paragraph 26, paragraphs 49-54); depositing a hermetic evaporation coating glass layer on the first coating (paragraph 13); and at least partially removing the at least one negatively structured first coating and the hermetic evaporation coating glass layer thereon (paragraphs 49-54). While it is not explicitly stated it is inherent that structuring a substrate with a resist mask over the substrate involves removing the resist mask layer after deposition as is shown by the lack of a mask being present in figure 1. Wienand discloses applying a glass layer comprising aluminum oxide and silicate, however, fails to disclose providing a borosilicate glass comprising aluminum oxide and alkali metal oxide components;

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however, Pliskin, teaching depositing a glass on the surface, discloses a borosilicate glass comprising aluminum oxide and alkali metal oxide components is known in the art to provide an appropriate coating and therefore it would have been obvious to one of ordinary skill in the art to have selected borosilicate glass comprising aluminum oxide and alkali metal oxide components with a reasonable expectation of successfully providing a glass coated surface. The prior art can be modified or combined to reject claims as prima facie obvious as long as there is a reasonable expectation of success. *In re Merck & Co., Inc.*, 800 F.2d 1091, 231 USPQ 375.

The reference fails to disclose the claimed relative thickness between the two layers, however, it is the examiners position that the determination of the thickness of coating layers is a result effective variable. Therefore it would have been obvious to one skill in the art at the time of the invention was made to determine the optimal value for the coating thickness used in the process, through routine experimentation, to substrate with the desired properties associated with both layers.

With regards to the limitation requiring the first coating to remain accessible at side edges of the structures, such is evidenced by US Patent 6100202 by Lin et al., wherein Lin discloses BSG glass such as that disclosed by Wienand and Pliskin are known to etched and therefore any layer beneath the BSG layer remains accessible as required by the claim. The examiner notes that the claim only requires the first layer to "remain accessible" after deposition of the hermetic layer, but the specification and/or the claim fails to explicitly define what encompasses remaining accessible and therefore giving the term a broad interpretation consistent with the specification, the first layer can be accessed by etching through the BSG layer and therefore as such the first layer

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remains accessible as required by the claim. During patent examination, the pending claims must be "given the broadest reasonable interpretation consistent with the specification" by giving words their plain meaning unless the specification provides a clear definition. See *In re Prater* 415 F.2d 1393 1404-05 162 USPQ 541 and *In re Zletz* 893 F.2d 319, 321, 13 USPQ2d 1320.

Claim 4, Wienand et al. discloses patterning the substrate with a resist mask doing so involves uncovering portions of the metallic substrate that are to be coated (paragraph 50).

Claim 5, Wienand et al. discloses coating with a resist (paragraph 50).

Claim 6, Wienand et al. discloses using a resist mask doing so inherently means that the coated resist sections of the hermetic coating will be removed (paragraph 50, figure 1).

Claim 11, Wienand et al. discloses the deposition can be performed through a mask (paragraph 50).

Claim 12, Wienand et al. discloses that the coating can consist of two layers (paragraph 24).

Claim 13, Wienand et al. discloses that the two layers are different compositions (table 2).

Claim 14, Wienand et al. discloses the thickness of the films 0.2-10 μm (paragraph 45).

Claim 15, the hermetic coating can be 2 different layers which would have a different composition (table 2).

Claim 16: Wienand et al. in view of Pliskin discloses all of the features of this claim as discussed above except it does not disclose evaporating coating material from at least two sources. It does teach however depositing multiple oxides to the surface to form the desired glass. To deposit more than one oxide at the same time it would be obvious to one of ordinary skill in the art to use more than one source for the coating material as the materials have different material properties and would need to be heated to different temperatures for evaporation.

Claim 22, Wienand et al. discloses that the layer can be applied using PIAD (paragraph 26).

Claim 33 and 34: Giving the term "solid metal substrate" its broadest reasonable interpretation, a metal resistor of Wienand et al. can read on a solid metal substrate with a metallic surface as required by the claims.

Claims 35-37: These claims are rejected for the same reasons as claims 4, 6, and 7 above.

6. Claims 2, 17-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Wienand et al. in view of Pliskin and Lin and further in view of US Patent 3953652 by Addiss et al., hereafter Addiss.

Wienand et al. in view of Pliskin and Lin teaches all the limitations of these claims as discussed above, but fail to disclose using electron beam to deposit the borosilicate glass. However, Addiss discloses electron beam is known in the art to effectively deposit films of borosilicate glass comprising aluminum oxide and alkali metal oxide components (Schotts 8329 glass) (example 1). Therefore it would have been

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obvious to one ordinary skill in the art to modify Wienand et al. in view of Pliskin and Lin to use electron beam to deposit the borosilicate glass with a reasonable expectation of successfully providing a coating because Addiss discloses electron beam is known and suitable for forming borosilicate glass coatings. The selection of something based on its known suitability for its intended use has been held to support a *prima facie* case of obviousness. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Claim 17: Addiss discloses heating the substrate improves the stability of the glass coating (Column 4, lines 53-55). Therefore it would have been obvious to modify Wienand et al. in view of Pliskin to heat the substrate to reap the benefits of a more stable coating.

Claim 18: Addiss discloses the pressure is a known result effective variable for depositing a stable coating (Column 3, line 62-Column 4, line 19) and therefore it would have been obvious to one of ordinary skill in the art to determine the optimum pressure in the process of Wienand et al. in view of Pliskin through routine experimentation to provide a stable coating.

7. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Wienand et al. in view of Pliskin, Lin and Addiss and further in view of Calhoun (US Patent No. 4,964,945).

Wienand et al. in view of Pliskin, Lin and Addiss teaches all of the features of claim 21 as discussed above including the desire to etch the surface after the deposition of the glass layer (column 2 lines 30-67). It does not teach to move the substrate during

the evaporation-coating process. However, Calhoun et al. teaches that during evaporative coating such as e-beam evaporation it is desirable to continuously move the substrate during deposition as this deposits the material substantially on the surfaces parallel to the plane of the substrate surface and allows for the further step of etching the mask material after deposition (column 2 lines 30-45). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Wienand et al. in view of Pliskin, Lin and Addiss to move the substrate during deposition as suggested by Calhoun with an expectation that it will allow for etching of the mask material after deposition.

Allowable Subject Matter

8. Claims 8-10, 19, and 20 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

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extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David Turocy whose telephone number is (571) 272-2940. The examiner can normally be reached on Monday-Friday 8:30-6:00, No 2nd Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Timothy Meeks can be reached on (571) 272-1423. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/David Turocy/
AU 1762


TIMOTHY MEEKS
SUPERVISORY PATENT EXAMINER